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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,120	09/19/2001	Kazuhisa Kashihara	214011US8	8425
22850	7590	01/16/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.			KIANNI, KAVEH C	
1940 DUKE STREET			ART UNIT	
ALEXANDRIA, VA 22314			PAPER NUMBER	

2877

DATE MAILED: 01/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/955,120

Applicant(s)

KASHIHARA ET AL.

Examiner

Kevin C Kianni

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Allowable Subject Matter***

1. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 4, is allowable because the prior art, in combination with other limitations of the base claim, does not teach a slide moving member slides and moves at least one side of the separating slab waveguide separated with this separating slit along said separating face depending on a temperature of AWG; and a light transmission central wavelength of an arrayed waveguide grating type optical multiplexer/demultiplexer is shifted by a slide moving operation of said slide moving member depending on the temperature.

### ***Claim Rejections -35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grand et al. (US 6,222,963).

Regarding claim 1-2, Grand teaches an optical waveguide circuit device (shown in at least fig. 2) comprising: a substrate 46 having a cleavage plane formed at least one of

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horizontally and perpendicularly to an orientation flat (shown at least in fig. 7 and 9, wherein item cleavage plane, the surface of cut pieces, is formed through incision/cut line V with respect to an orientation flat o and in fig. 9, the cleavage plane is in horizontal/vertical position); a waveguide 2 formed from a core on said substrate 46; and an incision line I constructed by a groove or/and a separating slit I formed by crossing at least one portion of the core 4/6 of said waveguide 2; one or more optical input waveguides arranged side by side (shown in at least fig. 1, items 8); a first slab waveguide 4 connected to output ends 44 of said optical input waveguides 8; an arrayed waveguide 40 connected to an output end 6 of said first slab waveguide 4 and including a plurality of channel waveguides 2 arranged side by side for transmitting light that has traveled through said first slab waveguide 4; said channel waveguides having different predetermined length (shown in at least fig. 6, items waveguides 2 having different predetermined lengths); a second slab waveguide 24 connected to an output end 20 of said arrayed waveguide 2; and a plurality of optical output waveguides 40 arranged side by side and connected to an output end of said second slab waveguide 24; wherein the incision line is a slit I/II formed in a mode crossing at least said arrayed waveguide 2.

However, Grand does not specifically teach (a) wherein the face of said incision line is set formed at an arbitrary angle with respect to the cleavage plane of said substrate. to a face different from the cleavage plane of said substrate (b) wherein the above slit is a groove. Nevertheless, Grand states that the incision lines facing the same cleavage lines of the substrate form are perpendicular to each other forming a 90° angle, but the

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angle can be set to be different than  $90^\circ$  (see specifically col. 11, lines 60-65; see col. 11, line 36-col. 12, line 13). Thus it would have been obvious to a person of ordinary skill in the art when the invention was made to modify Grand's incision line having a different angle than  $90^\circ$  by arbitrary forming the angle of the above incision line I/II with respect to the cleavage plane of the substrate 46 so that the incision lines would face different than the cleavage lines of the substrate which are perpendicular to each other (see at least col. 18, lines 20-44+); and with regard to limitation (b) it would have been obvious to a person of ordinary skill in the art when the invention was made to make the Grand's slits I/II with that of a conventional groove since the resultant optical system would provide an integrated waveguide circuit in which the wavelength for the device can be adjusted (see abstract).

4. Claims 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over combination of Grand et al. and Inoue et al. (US 5546483).

As stated above, Grand teaches all limitations of claim 2. However, Grand does not teach wherein a half-wave plate is inserted into the groove crossing said arrayed waveguide. This limitation is taught by Inoue et al. (shown in at least fig. 33, item 505/5). Thus, Inoue provides branching an optical line using only passive optical components (col. 1, lines 13-17). Thus it would have been obvious to a person of ordinary skill in the art when the invention was made to modify Grand's incision line with that of Inoue's groove 8 having a half plate 505 inserted there through so as to provide

an integrated waveguide circuit in which the wavelength for the device can be adjusted (see abstract).

***Response to Arguments and Amendment***

Applicant's argument filed on 10/20/03 have been fully considered but they are not persuasive.

Applicant alleges (page 6, 3<sup>rd</sup> parag.) that Grand does not teach cleavage plane in detail which are formed at least horizontally and perpendicularly to the orientation plane flat, and that a face of the incision line is formed at an arbitrary angle with respect to the cleavage plane of the substrate. The examiner responds that Grand teaches a substrate 46 having a cleavage plane which can be formed at least one of horizontally and perpendicularly to an orientation flat (shown at least in fig. 7 and 9, wherein item cleavage plane is formed through incision/cut line V with respect to an orientation flat o and in fig. 9, the cleavage plane is in horizontal/vertical position). The examiner further responds that an arbitrary angle can be set with respect to the cleavage plane of the substrate by an ordinary skill in the art when the invention was made as described above in rejection of claim 1.

Applicant alleges (page 7, 1<sup>st</sup> parag.) that the cleavage plane and the incision line of Grand are set to be the same. The examiner responds that the cleavage plane shown in at least fig. 2 is the cracking face consisting of cut pieces is the cleavage plane while the incision line is cutting lines such as lines I and II which is in accordance with the specification of the applicant (i.e., see parag, 16 of the specification).

With respect to applicant's objection of the combination of Grand and Inoue in teaching claim 3, the examiner responds that the applicant does not specifically state why this combination does not teach the limitations of claim 3.

***THIS ACTION IS MADE FINAL***

5. This action in response to applicant's amendment made FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Contact Information***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Cyrus Kianni whose telephone number is (703) 308-1216.

The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 6:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font, can be reached at (703) 308-4881.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

(703) 872-9306 (for formal communications intended for entry)

**or:**

Hand delivered responses should be brought to Crystal Plaza 4, 2021 South Clark Place, Arlington, VA., Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956.



Kevin Cyrus Kianni  
Patent Examiner  
Group Art Unit 2877

Frank Font  
Supervisory Patent Examiner  
Group Art Unit 2877

January 5, 2004